Appl. No.: 10/033,536
Amdt. Dated: 04/19/2004
Off. Act. Dated: 12/18/2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended): A magnetic contact apparatus for use with an alarm system, comprising:

a sensor unit; ~~and~~

at least five magnetically actuated switches; and

a magnetic shield around said switches configured to define an actuation zone;

wherein at least two of said magnetic switches are configured to be actuated to complete a logic circuit when a magnetic actuator is positioned within said actuation zone;

wherein said logic circuit is configured to be broken if either of said at least two switches is deactivated or if any of said other switches are activated.

Al cont.

2. (canceled)

3. (canceled)

4. (currently amended): An apparatus as recited in claim [[3]] 1, wherein said magnetic actuator comprises two permanent magnets having a predetermined magnetic flux density.

5. (original): An apparatus as recited in claim 4, wherein at least one of the at least five switches is positioned between said two magnets, and wherein the magnetic fields of said magnets oppose each other so as to not actuate said switch.

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6. (original): An apparatus as recited in claim 5, wherein at least two switches are placed in a position outside the field of predetermined flux density and are not actuated by the field of predetermined flux density.

7. (original): An apparatus as recited in claim 6, wherein three of the at least five switches are spaced in a row along the length of the sensor unit and the switches at each end of the row are actuated when the actuator unit is placed in proximity to the switches, and the middle switch remains in a deactivated state.

8. (original): An apparatus as recited in claim 7, wherein a switch is placed in parallel with the switches at each end of the row and are not actuated when the actuator unit is placed in proximity to the switches.

A1 cont.

9. (original): An apparatus as recited in claim 8, wherein either switch placed in parallel with the switch at the end of the row is actuated when a magnetic field in addition to the magnetic field generated by the actuator unit is placed in proximity to the switches.

10. (original): A magnetic contact apparatus for use with an alarm system, comprising:

a logic circuit configured to indicate an alarm condition if a magnetic actuator is moved outside an actuation zone or if a magnetic field from a source other than said magnetic actuator is brought into said actuation zone after said magnetic actuator is brought into said actuation zone.

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11. (original): An apparatus as recited in claim 10, wherein said logic circuit comprises:

at least five magnetically actuated switches; and

a magnetic shield around said switches configured to define said actuation zone;

wherein at least two of said magnetic switches are configured to be actuated and complete said logic circuit when said magnetic actuator is positioned within said actuation zone; and

wherein said logic circuit is configured to be broken if either of said at least two switches is deactivated or if any of said other switches are activated.

12. (original): An apparatus as recited in claim 11, further comprising a magnetic actuator.

Al cont.

13. (original): An apparatus as recited in claim 12, wherein said magnetic actuator comprises two permanent magnets having a predetermined magnetic flux density.

14. (original): An apparatus as recited in claim 13, wherein at least one of the at least five switches is positioned between said two magnets, and wherein the magnetic fields of said magnets oppose each other so as to not actuate said switch.

15. (original): An apparatus as recited in claim 14, wherein at least two switches are placed in a position outside the field of predetermined flux density and are not actuated by the field of predetermined flux density.

16. (original): An apparatus as recited in claim 15, wherein three of the at least five switches are spaced in a row along the length of the sensor unit and the switches at

each end of the row are actuated when the actuator unit is placed in proximity to the switches, and the middle switch remains in a deactivated state.

17. (original): An apparatus as recited in claim 16, wherein a switch is placed in parallel with the switches at each end of the row and are not actuated when the actuator unit is placed in proximity to the switches.

18. (original): An apparatus as recited in claim 17, wherein either switch placed in parallel with the switch at the end of the row is actuated when a magnetic field in addition to the magnetic field generated by the actuator unit is placed in proximity to the switches.

Cl cont.

19. (original): A magnetic contact apparatus for use with an alarm system, comprising:

a logic circuit;

said logic circuit comprising at least five magnetically actuated switches;

a shield around said switches configured to prevent magnetic fields from outside an activation zone from reaching said switches;

at least two of said magnetic switches configured to be actuated and complete said logic circuit when a magnetic field is within said activation zone;

said logic circuit further configured to be broken if either of said at least two switches is deactivated or if any of said other switches are activated;

wherein breaking of said logic circuit is indicative of an alarm condition.

20. (original): An apparatus as recited in claim 19, further comprising a magnetic actuator.

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21. (original): An apparatus as recited in claim 20, wherein said magnetic actuator comprises two permanent magnets having a predetermined magnetic flux density.

22. (original): An apparatus as recited in claim 21, wherein at least one of the at least five switches is positioned between said two magnets, and wherein the magnetic fields of said magnets oppose each other so as to not actuate said switch.

23. (original): An apparatus as recited in claim 22, wherein at least two switches are placed in a position outside the field of predetermined flux density and are not actuated by the field of predetermined flux density.

Al cont.

24. (original): An apparatus as recited in claim 23, wherein three of the at least five switches are spaced in a row along the length of the sensor unit and the switches at each end of the row are actuated when the actuator unit is placed in proximity to the switches, and the middle switch remains in a deactivated state.

25. (original): An apparatus as recited in claim 24, wherein a switch is placed in parallel with the switches at each end of the row and are not actuated when the actuator unit is placed in proximity to the switches.

26. (original): An apparatus as recited in claim 25, wherein either switch placed in parallel with the switch at the end of the row is actuated when a magnetic field in addition to the magnetic field generated by the actuator unit is placed in proximity to the switches.

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27. (original): A magnetic contact apparatus for use with an alarm system, comprising:

a sensor unit;

said sensor unit comprising a common conductor, an alarm conductor, and a guard conductor and at least five switches;

wherein each of said switches has an activated state and a deactivated state;

wherein at least two of said switches are adapted to be placed in an activated state in response to a magnetic field of predetermined flux density; and

wherein an alarm condition is indicated if any one of said at least two switches is deactivated or if any of said other switches is activated after said at least two switches are activated.

a1 cont.

28. (original): An apparatus as recited in claim 27, wherein said sensor unit further comprises a logic circuit electrically interconnecting the switches and the common conductor, the alarm conductor and the guard conductor to complete a series circuit between the common conductor and the guard conductor whenever the two of at least five switches are activated by the actuator unit and the remaining switches are in the deactivated condition, and completing a circuit between the common conductor and the alarm conductor whenever any one of the at least two of five switches are deactivated or any one of the remaining switches are activated.

29. (original): An apparatus as recited in claim 27, further comprising two permanent magnets of predetermined magnetic flux density.

30. (original): An apparatus as recited in claim 29, wherein at least one of the at least five switches is positioned between the two magnets, wherein the magnetic fields of said magnets oppose each other so as to not actuate the switch.

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31. (original): An apparatus as recited in claim 27, wherein at least two switches are placed in a position outside the field of predetermined flux density and are not actuated by the field of predetermined flux density.

32. (original): An apparatus as recited in claim 27, further comprising a magnetically permeable shield disposed over said switches and configured to define an actuation zone.

33. (original): An apparatus as recited in claim 27, wherein three of the at least five switches are spaced in a row along the length of the sensor unit and the switches at each end of the row are actuated when the actuator unit is placed in proximity to the switches, and the middle switch remains in a deactivated state.

34. (original): An apparatus as recited in claim 33, wherein a switch is placed in parallel with the switches at each end of the row and are not actuated when the actuator unit is placed in proximity to the switches.

a1 cont.

35. (original): An apparatus as recited in claim 34, wherein either switch placed in parallel with the switch at the end of the row is actuated when a magnetic field in addition to the magnetic field generated by the actuator unit is placed in proximity to the switches.

36. (original): A tamper resistant magnetic contact apparatus for use with an alarm system, comprising:

a sensor unit;

said sensor unit having at least five electrically interconnected magnetically actuated reed switches in a logic circuit;

said logic circuit configured to activate an alarm; and

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an actuator unit providing one or more magnetic fields sufficient to activate a plurality of said reed switches when brought into proximity of said sensor unit;

wherein the deactivation of an active switch or the activation of an inactive switch in said sensor unit is indicative of an alarm condition.

37. (currently amended): An apparatus as recited in claim ~~13~~ 36, said contact further comprising means for detecting tampering with the sensor unit.

38. (original): An apparatus as recited in claim 37, wherein said means for detecting tampering, comprises:

a tamper plate having a magnet;

a tamper switch associated with said magnet and said plate, said tamper switch exposed to a magnetic field of predetermined flux density; and

a tamper circuit electrically coupled with said switch, wherein the tamper switch and tamper circuit are configured to trigger an alarm when said magnetic field associated with said tamper switch is altered.

A1 Cont.

39. (original): An apparatus as recited in claim 38:

wherein said tamper plate comprises a core section and an outer section;

said core section configured to be mounted to a surface;

said outer section coupled with said sensor unit;

said outer section severable from said core section.

40. (original): An apparatus as recited in claim 39, said tamper plate further comprising a magnetic field shield disposed between the core section of the tamper plate and the mounting surface.

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41. (original): An apparatus as recited in claim 36, wherein said sensor unit further comprises a means for shielding said reed switches of said sensor unit from external magnetic fields.

42. (currently amended): A tamper resistant alarm contact apparatus, comprising:

an intrusion sensing unit with a logic circuit configured to activate an alarm; and

means for detecting tampering with the intrusion sensing unit.

43. (original): An apparatus as recited in claim 42, wherein said means for detecting tampering comprises:

a tamper plate having a magnet;

a tamper switch associated with said magnet and said plate, said tamper switch exposed to a magnetic field of predetermined flux density; and

a tamper circuit electrically coupled with said switch, wherein the tamper switch and tamper circuit are configured to trigger an alarm when said magnetic field associated with said tamper switch is altered.

al cont.

44. (original): An apparatus as recited in claim 42:

wherein said tamper plate comprises a core section and an outer section;

said core section configured to be mounted to a surface;

said outer section coupled with said sensor unit;

said outer section severable from said core section.

45. (original): A tamper resistant magnetic alarm contact apparatus, comprising:

a sensor unit having a tamper circuit and a logic circuit including electrically interconnected magnetically actuated reed switches;

said tamper circuit and said logic circuit configured to activate an alarm;

an actuator unit providing one or more magnetic fields sufficient to activate a plurality of said reed switches in said logic circuit when brought into proximity of said sensor unit;

wherein the deactivation of an active switch or the activation of an inactive switch in said sensor unit will trigger an alarm; and

a tamper plate having a magnet associated with said sensor unit and said tamper circuit;

said sensor unit having a tamper switch associated with said magnet and said plate;

said sensor unit having a tamper circuit electrically coupled with said tamper switch;

wherein the tamper switch and tamper circuit are configured to trigger an alarm when said magnetic field associated with said tamper switch is altered.

46. (original): An apparatus as recited in claim 45, wherein said tamper plate comprises:

a core section and an outer section;

said core section configured to be mounted to a surface;

said outer section coupled with said sensor unit;

said outer section severable from said core section.

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47. (new): A tamper resistant magnetic contact apparatus for use with an alarm system, comprising:

a sensor unit;

said sensor unit having at least five electrically interconnected magnetically actuated reed switches in a logic circuit;

said logic circuit configured to activate an alarm;

an actuator unit providing one or more magnetic fields sufficient to activate a plurality of said reed switches when brought into proximity of said sensor unit;

a tamper plate having a magnet, a core section and an outer section;

said core section configured to be mounted to a surface;

said outer section coupled with said sensor unit;

said outer section severable from said core section; and

a magnetic field shield disposed between the core section of the tamper plate and the mounting surface;

a tamper switch associated with said magnet and said plate, wherein said tamper switch is exposed to a magnetic field of predetermined flux density from said magnet; and

a tamper circuit electrically coupled to said switch, wherein the tamper switch and tamper circuit are configured to trigger an alarm when said magnetic field associated with said tamper switch is altered.

48. (new): An apparatus as recited in claim 47, wherein said sensor unit further comprises a means for shielding said reed switches of said sensor unit from external magnetic fields.

49. (new): An apparatus as recited in claim 47, wherein said actuator unit comprises two permanent magnets of predetermined magnetic flux density.

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50. (new): An apparatus as recited in claim 49, wherein at least one of the at least five switches is positioned between the two magnets, wherein the magnetic fields of said magnets oppose each other so as to not actuate the switch.

51. (new): An apparatus as recited in claim 47, wherein at least two switches are placed in a position outside the field of predetermined flux density and are not actuated by the field of predetermined flux density.

52. (new): An apparatus as recited in claim 47, further comprising a magnetically permeable shield disposed over said switches and configured to define an actuation zone.

Cl cont'd.

53. (new): An apparatus as recited in claim 47, wherein three of the at least five switches are spaced in a row along the length of the sensor unit and the switches at each end of the row are actuated when the actuator unit is placed in proximity to the switches, and the middle switch remains in a deactivated state.

54. (new): An apparatus as recited in claim 53, wherein a switch is placed in parallel with the switches at each end of the row and are not actuated when the actuator unit is placed in proximity to the switches.

55. (new): An apparatus as recited in claim 54, wherein either switch placed in parallel with the switch at the end of the row is actuated when a magnetic field in addition to the magnetic field generated by the actuator unit is placed in proximity to the switches.